

REMARKS

Claims 1-7, 11-16, 22 and 23 were pending in the application. In the Office Action dated March 11, 2011, claims 1-7, 11-16, 22 and 23 are rejected. In the instant Amendment, claims 1, 2, 7 and 11 have been amended, claims 3-6, 12-16, 22 and 23 have been cancelled without prejudice and new claim 24 has been added.

Claims 1 and 2 have been amended to correct an inadvertent error in the range of Si. Specifically, in the Amendment filed on March 2, 2011, the intended lower limit of Si range of 3.1%, corresponding to the lower limit of Si range incorporated from the canceled claim 21, was incorrectly input as 3.6%. This error has been corrected by an amendment in the present Amendment.

Claims 1-2 have also been amended to recite an upper limit of the Si range of 3.5. Support for this amendment can be found in the present specification at page 9, lines 3-6. Claims 1-2 have further been amended to incorporate the subject matter of claims 4, 5, 22, and 23, each of which is now cancelled.

Claim 2 has further been amended to incorporate the subject matter of claim 3, now cancelled.

Claim 7 has been amended to depend from claim 2.

Claim 11 has been amended to incorporate the subject matter of claims 12-16, each of which is now cancelled.

New independent claim 24 is identical to claim 1, except that the lower bound of Si is 2.5%. Support is found in the specification, e.g., at page 9, line 6 and at page 27, Table 3, samples 22-26.

Upon entry of the instant Amendment, claims 1, 2, 7, 11 and 24 will be pending in the application. No new matter has been introduced by the present amendments. Entry of the foregoing amendment and consideration of the following remarks are respectfully requested.

Claim Rejections under 35 U.S.C. §103(a)

Claims 1-7, 11-16, 22 and 23 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 7,513,959 to Takashima et al. alone or in view of U.S. Patent No. 5,084,112 to Tachino et al.

Foreign Priority

The present application claims foreign priority under 35 U.S.C. §119 from the following patent applications filed in Japan:

2003-347113 ("JP'113") filed October 6, 2003

2004-148993 ("JP'993") filed May 19, 2004

The Office Action mailed June 17, 2008 acknowledged the claim for foreign priority under 35 U.S.C. §119 and acknowledged that certified copies of all of the priority documents have been received.

U.S. Patent No. 7,513,959 to Takashima et al. issued April 7, 2009 from Application No. 10/537,194, which is a national stage application of International Application No. PCT/JP03/15462 filed December 3, 2003. Therefore, the 35 U.S.C. §102(e) date for U.S. Patent No. 7,513,959 to Takashima is December 3, 2003.

Priority Japanese patent application 2003-347113 was filed October 6, 2003, which was prior to the 35 U.S.C. §102(e) date of December 3, 2003 of U.S. Patent No. 7,513,959.

Applicants submit herewith English language translations with verification of priority Japanese patent application No. 2003-347113 and priority Japanese patent application No. 2004-148993.

Applicants submit that claims 1-2, 7 and 11, as amended, and new claim 24 are fully supported by Japanese patent application 2003-347113 and are therefore entitled to the priority date of October 6, 2003.

In view of the English language translation of priority Japanese patent application No. 2003-347113, it is respectfully requested that U.S. Patent No. 7,513,959 to Takashima et al. be removed as a prior art reference.

It is submitted that U.S. Patent No. 7,513,959 to Takashima et al. is not a prior art reference with respect to present claims 1, 2, 7 and 11, and the rejection of these claims should be withdrawn.

Claims 1 to 7, 11 to 16 and 22¹ are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,084,112 to Tachino et al. in view of machine English translation of Japanese patent No. 10-219396 related to WO 99/47718 to Okayama et al. The subject matter of claim 23 has been incorporated into independent claims 1-2. Therefore the rejection is believed obviated.

Regardless, the claims, as amended, are not obvious over Tachino in view of Okayama. Tachino discloses a steel that does not contain Cu. In the Office Action, the Examiner contends that although Tachino does not teach adding Cu in its steel, this deficiency is cured by Okayama which discloses adding Cu to increase the strength of its steel without degrading magnetic properties (the Office Action at paragraph 17). Applicants respectfully submit that Okayama discloses steels containing Si less than 0.3 and Mn less than 0.5%, much lower than the presently claimed steel. A person skilled in the art would not have sought to combine Tachino and Okayama in the particular manner, i.e., adding Cu to a high Si and Mn steel.

For example, there is no reason why a person skilled in the art would have picked the high Si and Mn steel from Tachino and modified it by adding Cu according to Okayama without considering the significant differences in the contents of Si and Mn. There is no reason that a person skilled in the art would have predicted that the addition of Cu in a high Si and Mn steel would have achieved the benefits of Cu, but would not have caused any deterioration of steel properties. According to the present application both Si and Mn are included for increasing volume resistivity and reducing core loss (see the specification at page 8, line 32, through page 9, line 20). Thus, the steels of Okayama and the steels of the present invention do not have the same magnetic properties. Based on Okayama's teachings that adding Cu would not degrade magnetic properties of a steel having low Si and Mn

¹ In the Office Action, this rejection includes claim 21. However, claim 21 was canceled. Based on paragraph 15 of the Office Action, Applicants assume that the Examiner intended to include claim 22 in this rejection.

contents, e.g., the steel of Okayama, a person skilled in art would not have expected that adding Cu would also not degrade magnetic properties of a steel having much higher Si and Mn, e.g., the steel of the present invention.

Also, as previously discussed regarding an average crystal grain size 30-300 μ m, the present invention explains that the crystal grain size can be independently controlled by for example the maximum peak temperature of the recrystallization annealing and the holding time in this temperature range before heat treatment, e.g., controlled to 3 μ m to 300 μ m by heat treatment at 800°C to 1100°C or so for 20 seconds to 5 minutes or so (see, the specification at page 20, lines 30-36). Neither Tachino nor Okayama suggest or disclose the recited average crystal grain size 30-300 μ m or a recrystallization annealing temperature or holding time for achieving such crystal grain size.

For at least these reasons, claims 1, 2, 7 and 11, as amended, are not obvious under 35 U.S.C § 103(a) over Tachino in view of Okayama. Withdrawal of the rejection is respectfully requested.

Conclusion

In view of the foregoing amendments and remarks, Applicants respectfully submit that the present application is in condition for allowance. Early and favorable action by the Examiner is earnestly solicited. If the Examiner believes that issues may be resolved by a telephone interview, the Examiner is invited to telephone the undersigned at the number below.

Respectfully Submitted,

Date: August 10, 2011

By: /Weining Wang/
Weining Wang
Reg. No. 47,164
KENYON & KENYON LLP
One Broadway
New York, New York 10004
Telephone: (212) 425-7200
Fax: (212) 425-5288
CUSTOMER NO. 26646